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Division of Forest Insect Investigations

POST-FLIGHT SURVEYS ON ENGELMANN SPRUCE BEETLE INFESTATIONS IN NORTHERN IDAHO AND WESTERN MONTANA 1953

Forest Insect Laboratory
Coeur d'Alene, Idaho
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POST-FLIGHT SURVEYS OF ENGELMANN SPRUCE BEETLE INFESTATIONS IN NORTHERN IDAHO AND WESTERN MONTANA 1/ 1953

A large number of Engelmann spruce stands were surveyed by this laboratory during the summer and fall of 1953 to fulfill the need for information on the post-flight Engelmann spruce beetle infestation. The surveys were designed to obtain data to meet three specific needs: 1) to up-date pre-flight data from 1952 or early 1953 surveys, 2) provide basic data on known but unappraised outbreaks and, 3) measure the results of control. To meet the various requirements, different types of surveys were made. Where the areas had been previously surveyed and the data were adequate for sale preparation, post-flight surveys were made to measure the change in status of the infestation. The data obtained could then be applied to previous survey information to show the current loss. These surveys were called "ratio" surveys because they were designed to show the ratio of trees attacked in 1953 to trees attacked in 1952. In the following table these ratios are shown for trees and for basal area. The ratio of change on a tree to tree basis is a good measure of the entomological aspects of the infestation. Because beetle attacked trees are normally of larger than average diameter, a ratio of change on a basal area basis gives a figure that is nearer to a comparison of the actual volume killed than the tree to tree figure. A better comparison would, of course, be on volume to volume basis but to compile such data within the short period available is not practical.

Where no information other than detection survey data was available, reconnaissance surveys were made. Reconnaissance surveys provided the same information as ratio surveys and in addition supplied the necessary data on the green residual stand.

In the following tables the acreage figure given is usually of surveyed spruce type averaging 3 M ft. bm. per acre or over. Type having less than 3 M bd. ft. per acre is not considered to be heavily enough stocked to maintain a serious infestation and therefore is not considered "host type".

1/ Prepared by T. T. Terrell, Entomologist

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE I

CABINET NATIONAL FOREST

Block and Compartment	No.	Acres Surveyed	Type of Survey Ratio	Type of Survey Reconn.	Ratio of Change 1953 to 1952 Stems	Ratio of Change 1953 to 1952 B. A.	% of Residual Stand Infested (Stems) 1952	% of Residual Stand Infested (Stems) 1953	% of Residual Stand Infested (Stems) '52-'53	Remarks
Cabinet										
Dry Cr.	7	390		X	.9:1	1.0:1	12.6	15.0	25.7	
Pilgrim Cr.	12	400		X	1.3:1	1.1:1	15.0	22.8	34.4	
Martin Cr.	21	250		X	1.2:1	1.3:1	15.6	22.2	34.4	
Barnum Cr.	86	150		X	3.7:1	3.4:1	7.0	26.3	31.5	
Lost Prairie	90	1,080		X	1.0:1	1.0:1	2.5	2.6	5.0	
Fishtrap Cr.	134	1,400		X	.5:1	.4:1	3.6	2.0	5.5	
Four Lakes Cr.	139	1,720		X	1.5:1	2.3:1	.8	1.2	2.0	Small spot of infestation.
Upper Vermillion Riv.	128	3,300	X		2.0:1	2.1:1	3.6	7.0	10.3	
Rainy Cr.	54	650	X		4.0:1	2.9:1	18.0	73.5	78.3	
Dominion-Randolph	55	504	X		1.2:1	1.1:1	6.4	7.9	13.8	
Twelve Mile Cr.	60	2,000		X	3.1:1	2.6:1	4.7	15.6	19.4	
Big Creek Mid. Fk.	70	2,080	X		4.0:1	2.6:1	16.0	64.2	69.9	
Big Creek East Fk.		480	X		.8:1	.9:1	20.9	16.9	34.3	Logged
Two Mile	74	2,300		X	.6:1	.8:1	14.8	11.1	24.3	
South Fk. Little Joe	76	547	X		2.5:1	1.9:1	6.7	16.7	22.3	
		17,251			2.2:1	1.8:1	6.7	15.7	21.3	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE II

CLEARWATER NATIONAL FOREST

Block & Compartment	No.	Acres Surveyed	Type of Survey		Ratio of Change 1953 to 1952		% of Residual Stand Infested (Stems)			Remarks
			Ratio	Reconn.	Stems	B. A.	1952	1953	'52-'53	
Cedars										
Swamp Cr.	11	1,592		X	3.4:1	3.5:1	2.5	8.7	11.0	
Locksa										
Gravey Cr.	20	10,180	X		2.5:1	2.4:1	8.6	21.6	28.3	
Indian Grave Cr.	88	3,000	X		1.2:1	1.4:1	1.6	3.7	5.2	
Clearwater										
Isabella Cr.	24	1,080		X	-	-	0	1.5	1.5	Endemic
Quartz Cr.	30	5,330		X	3.1:1	2.9:1	3.5	11.5	14.6	
Eldorado Cr.	49	1,723		X	3.7:1	2.9:1	5.0	19.6	23.6	
Obia Cr.	51	2,662		X	-	-	0	.5	.5	Endemic
Fish Cr.	52	2,500		X	.8:1	.8:1	4.0	3.4	7.3	
		28,067			2.3:1	2.2:1	3.0	7.7	10.5	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE III

FLATHEAD NATIONAL FOREST

Block and Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Glacier										
Upper Yakinikak Cr.	103	500		X	6.7:1	7.6:1	3.1	21.7	24.1	
Teepee Cr.	105	2,730	X		2.9:1	2.4:1	5.1	14.6	18.9	
Teepee Lake	106	500		X	2.0:1	2.5:1	.8	1.7	2.5	Endemic
Lower Whale Cr.	107	5,497	X		2.3:1	1.6:1	5.0	11.4	15.8	
Whale Cr.	108	3,800		X	2.0:1	1.7:1	3.0	6.3	9.1	
Moose Cr.	111	3,000		X	3.1:1	2.8:1	2.1	6.6	8.6	
Cyclone Cr.	118	2,500		X	.7:1	.9:1	.9	.6	1.5	Endemic
Coal Cr.	119	2,100		X	1.6:1	1.4:1	2.1	3.5	5.5	
Upper Coal Cr.	120	2,600	X		2.2:1	1.8:1	2.9	6.3	9.0	
South Fk. Coal	121	2,300	X		2.8:1	2.9:1	2.9	8.1	10.8	
Hallowatt (Kletonus)	128	930		X	1.0:1	1.0:1	.6	.6	1.2	Endemic
Hallowatt, Hallowatt Cr.		5,400	X		2.0:1	1.7:1	4.5	8.8	12.9	
Kalispell										
Martin Cr.	204	1,400	X		.6:1	.6:1	3.4	1.9	5.2	
Keith Mtn.	205	1,080		X	-	-	-	-	-	No inf. recorded.
Miller Cr.	206	1,560		X	.5:1	1.4:1	.5	.3	.8	Spot of inf.
Gergen Cr.	207	200		X	2.3:1	3.2:1	1.5	3.6	5.0	
Bowen Meadows	209	1,800	X		1.2:1	.9:1	3.0	3.5	6.4	
Plume Cr.	210	1,575	X		.8:1	.9:1	5.0	4.0	8.8	
Reid Cr.	222	400		X	0:1	0:1	5.3	0	5.3	Chem. control.
Hand Cr.	229	1,115	X		1.1:1	.8:1	2.6	2.7	5.2	
Squaw Meadows	230	689		X	1.7:1	1.7:1	4.0	6.7	10.4	
Ingalls Cr.	233	130		X	0:1	0:1	2.9	0.	2.9	
Teepee Cr.	234	1,400	X		.8:1	.9:1	5.0	4.1	8.0	
Coram										
Lower Bunker Cr.	328	512		X	.7:1	.6:1	5.1	3.7	8.6	

FLATHEAD NATIONAL FOREST (Cont'd.)

Block and Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Coram (Cont'd.)										
Upper Bunker Cr.	329	2,700		X	.7:1	.7:1	6.0	4.4	10.1	
Quintonkon Cr.	339	960		X	.9:1	.6:1	4.4	4.4	8.6	
Graves Cr.	344	4,110		X	.4:1	.4:1	.8	.3	1.1	Endemic
Dirty Face Cr.	372	2,210		X	1.0:1	1.1:1	.2	.2	.4	Endemic
Swan										
Echo	412	300		X	.5:1	.3:1	4.0	2.0	5.9	Logging
Bond Cr.	422	660		X	1.4:1	1.2:1	7.2	11.2	17.6	Spg. control
Elk Basin		320		X	.4:1	.4:1	5.3	2.8	7.9	
Yew Cr.	424	445		X	1.1:1	1.2:1	5.1	6.1	10.9	
Bug Cr.	426	240		X	-	-	-	2.3	2.3	No '52 inf.
Howsley Cr.	432	700	X		.5:1	.7:1	13.3	6.7	19.1	
Henry Cr.	433	230	X		2.4:1	1.6:1	20.0	47.4	57.9	
Soup Cr.	443	2,580		X	3.0:1	4.2:1	.5	.7	1.1	Endemic
Penny Cr.	444	400		X	.7:1	.9:1	1.5	1.1	2.6	
North Whitetail	445	510		X	.5:1	.3:1	.9	.4	1.3	Endemic
Whitetail	446	2,050		X	.5:1	.7:1	.9	.5	1.4	Endemic
North Woodward	447	1,265		X	.8:1	.5:1	1.6	1.3	2.9	Endemic
Finley Cr.	448	2,575		X	1.0:1	1.5:1	.7	.7	1.5	Endemic
Woodward Cr.	449	1,475		X	4.0:1	4.0:1	.4	1.5	1.9	Endemic
Fatty Cr.	451	2,700		X	.7:1	1.2:1	1.4	1.0	2.4	Endemic
Cold Cr.	458	1,248		X	1.4:1	1.3:1	2.3	3.8	6.0	
So. Fk. Cold Cr.	459	5,550		X	1.4:1	1.1:1	2.3	3.3	5.5	
Elk Cr.	460	192		X	2.0:1	2.0:1	4.9	10.3	14.7	
Windfall Cr.	461	1,900		X	1.9:1	1.1:1	2.5	3.6	6.0	
Glacier Slough	462	700		X	4.1:1	3.8:1	4.0	17.0	15.2	
Uncompiled	463	446		X	1.5:1	.9:1	4.6	7.2	11.5	
Lower Beaver	464	480		X	9.1:1	8.4:1	1.8	17.4	18.9	
Bunyan Lake	466	768		X	10.5:1	13.4:1	.6	6.4	7.0	Poor sample.
Uncompiled	467	460		X	10.0:1	5.0:1	1.7	17.9	19.3	Poor sample.
Sunset Cr.	469	100		X	5.4:1	4.3:1	3.2	15.9	18.3	
Gordon Ranch	471	64		X	4.0:1	-	1.5	7.0	8.4	

FLATHEAD NATIONAL FOREST (Cont'd.)

Block and Compartment	No.	Acres Surveyed	Type of Survey Ratio	Type of Survey Reconn.	Ratio of Change 1953 to 1952 Stems	Ratio of Change 1953 to 1952 B. A.	% of Residual Stand Infested (Stems) 1952	% of Residual Stand Infested (Stems) 1953	% of Residual Stand Infested (Stems) '52-'53	Remarks
Swan (Cont'd.)										
Holland Lake	472	50	X		1.9:1	1.7:1	12.5	23.6	33.1	
Barber Cr.	473	440		X	3.9:1	5.5:1	3.5	14.1	17.1	
Landing Field	477	144		X	6.0:1	-	.4	2.6	3.0	
Lion Cr.	481	2,860		X	1.0:1	.7:1	2.0	1.9	3.9	Partial control.
Goat Cr.	484	2,425		X	.3:1	.2:1	2.4	.6	3.0	
Swan River		800		X	5.2:1	3.2:1	1.5	8.0	9.4	Parts of 459, 461, 477
Mission Mtn.										
Cold Cr.	458A	1,744		X	2.9:1	2.2:1	1.9	5.6	7.4	
So. Cold Cr.	459A	1,250		X	1.2:1	1.3:1	2.0	2.4	4.3	
Elk Cr.	460A	464		X	1.6:1	1.7:1	6.0	10.4	15.8	
Windfall Cr.	461A	2,100		X	1.3:1	1.2:1	3.3	4.5	7.6	
Glacier	462A	1,328		X	4.0:1	3.0:1	1.4	5.6	6.9	
Bunyan Lake	466A	448		X	2.0:1	2.7:1	1.7	2.2	3.9	
Crystal Lake	468A	656		X	3.0:1	2.7:1	2.6	7.8	10.2	
Beaver Cr.	469A	1,004		X	4.2:1	5.3:1	6.2	27.7	32.2	
		97,769			1.9:1	1.6:1	2.5	4.8	7.2	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE IV

KANIKSU NATIONAL FOREST

Block and Compartment	No.	Acres Surveyed	Type of Survey Ratio	Type of Survey Reconn.	Ratio of Change 1953 to 1952 Stems	Ratio of Change 1953 to 1952 B. A.	% of Residual Stand Infested (Stems) 1952	% of Residual Stand Infested (Stems) 1953	% of Residual Stand Infested (Stems) '52-'53	Remarks
Pend Oreille										
Thunder Cr.	110	250		X	1.0:1	1.3:1	7.5	8.1	15.0	
Deemer Cr.	111	1,230		X	2.6:1	5.2:1	2.5	6.6	8.9	
Leola Cr.	112	1,200		X	2.0:1	1.9:1	2.2	4.4	6.5	
Boundary										
Upper Priest Falls	202	800	X		2.8:1	3.6:1	9.0	25.7	32.4	
Little Snowy Top	204	1,090		X	-	-	-	-		West side only.
Rock Cr.	205	2,325	X		3.8:1	5.4:1	9.4	36.5	42.5	
Bog Cr.	502	1,356	X		1.6:1	1.3:1	3.5	5.5	8.8	
Saddle Cr.	505	2,620		X	2.8:1	2.0:1	2.3	6.8	8.9	
Priest River										
Lower Gold Cr.	211	520	X		.2:1	.2:1	3.4	.7	4.1	
Boulder Cr.	212	1,868	X		.3:1	.8:1	3.1	.8	3.9	
N. Fk. Goose Cr.	331	380	X		.4:1	.3:1	12.0	3.5	15.1	
Blickensderfer	341	375	X		.5:1	.4:1	9.4	5.0	90.6	
Experiment Station	353	360		X	.0:1	.0:1	5.1	.0	5.1	
Bonners Ferry										
Mission Cr.	403	400	X		.4:1	.4:1	11.5	4.4	15.4	
Gillon Cr.	405	300		X	0:1	0:1	.7	.0	.7	
Canuck Cr.	408	5,183	X		.8:1	.7:1	4.0	3.0	6.6	
Upper Deer Cr.	419	1,000	X		1.8:1	1.7:1	20.0*	35.0	48.0	*Estimated.
Lost Cr.	517	930		X	-	-	-	2.0	2.0	No '52 inf. found.
Upper Myrtle	519	2,350	X		1.7:1	1.8:1	5.3	9.0	13.8	
Upper Snow	521	3,360	X	X	1.2:1	1.2:1	2.6	3.3	8.5	
Beehive	601	1,345	X		3.4:1	4.2:1	8.9	30.0	36.2	
McCormick Cr.	604	1,070	X		7.2:1	5.0:1	17.9	100.0	100.	
Hellroaring	609	300	X		2.1:1	2.0:1	-	-	-	No oper. sur. data.

KANIKSU NATIONAL FOREST
TABLE IV (Cont'd.)

Block and Compartment	No.	Acres Surveyed	Type of Survey Ratio	Type of Survey Reconn.	Ratio of Change 1953 to 1952 Stems	Ratio of Change 1953 to 1952 B. A.	% of Residual Stand Infested (Stems) 1952	% of Residual Stand Infested (Stems) 1953	% of Residual Stand Infested (Stems) '52-'53	Remarks
Lightening										
Lunch Cr.	629	480		X	2.4:1	1.1:1	1.3	4.0	5.2	
Rattle Cr.	634	1,350	X		4.7:1	6.0:1	17.0	79.5	83.0	
Bear Cr.	635	1,400		X	.4:1	-	5.3	2.0	7.2	
Mud Cr.	637	480		X	3.5:1	2.3:1	16.3	62.5	68.6	
Porcupine	638	355	X		3.3:1	3.3:1	28.0	90.1	93.0	
Steep Cr.	639	600		X	2.0:1	-	9.7	13.1	21.5	
Wellington	640	2,060		X	1.2:1	1.2:1	4.3	5.0	9.1	
State of Idaho										
Priest River Protective Association										
Hunt Cr.		1,540		X	1.2:1	1.2:1	1.8	2.3	4.0	
Tarlac Cr.		700		X	.3:1	.5:1	15.2	6.0	11.1	
								7.0		
		39,577			1.8:1	1.7:1	4.9	9.1	13.6	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE V

KOOTENAI NATIONAL FOREST

Block and Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Yaak										
American	1	3,070		X	.5:1	.6:1	1.6	.9	2.5	
Mid. W. Fk. Yaak Riv.	9	210		X	1.5:1	3.2:1	1.6	2.3	3.9	
Benefield Cr.	10	460		X	-	-	-	-	-	No spruce.
Pete Cr.	20	5,230		X	.8:1	1.3:1	4.9	4.1	8.8	
Spread Cr. (South)	23	1,760		X	1.4:1	1.5:1	14.6	20.2	31.8	
" " (North)		1,500	X		2.1:1	1.9:1	10.6	25.7	33.6	
So. Fk. Meadow Cr.	28	1,519	X		4.0:1	4.2:1	15.4	62.3	68.1	
Beaver Cr.	32	600		X	.7:1	.7:1	3.9	2.7	6.5	
So. Fk. Yaak Riv.	33	800		X	2.0:1	2.0:1	20.0*	41.7	53.4	* Estimate
Fowler Cr.	34	690		X	8.8:1	6.2:1	3.8	35.0	37.5	
Upper 17 Mile	51	765	X		2.0:1	2.0:1	14.0	28.0	38.1	
Libby-Troy										
Feeder Cr.	45	235		X	1.4:1	1.1:1	9.4	14.1	22.2	
O'Brien Cr.	50	2,388	X		3.3:1	2.3:1	10.5	34.5	41.4	
Lynx Cr.	52	645	X		1.9:1	2.1:1	10.8	20.7	29.3	
Star Cr.	56	382	X		2.6:1	3.7:1	5.2	13.6	18.1	
So. Fk. Keeler Cr.	63	1,250	X		2.2:1	1.9:1	13.5	29.1	38.7	
Spar Lake	64	1,000	X		3.7:1	3.0:1	12.3	45.3	52.0	
Ross Cr.	66	2,250		X	1.1:1	1.1:1	13.9	13.7	25.7	
Upper Quartz Cr.	73	610		X	1.2:1	1.6:1	4.3	5.6	9.7	
So. Fk. Big Cr.	92	1,640		X	2.4:1	1.9:1	1.9	4.6	6.4	Logging
N. Fk. Big Cr.	96	288	X		1.1:1	1.2:1	9.1	10.2	18.4	
Little N. Fk. Big Cr.	97	1,156	X		6.3:1	5.1:1	13.6	85.0	87.0	
Sullivan Cr.	100	350		X	.8:1	-	6.4	5.2	11.3	Chem. control.
Dodge Cr.	101	1,230	X		1.6:1	1.6:1	10.0	16.4	24.8	
Pinkham Cr.	105	7,700		X	4.9:1	5.3:1	1.7	8.5	10.0	

KOOTENAI NATIONAL FOREST
TABLE V (Cont'd.)

Block and Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Tobacco										
Clarence-Stahl	122	1,753	X		2.0:1	1.9:1	8.1	16.4	23.2	
Foundation Cr.	123	2,516	X		1.8:1	1.4:1	17.5	32.0	43.9	
Graves Cr.	124	458	X		2.2:1	1.8:1	30.5	67.6	77.5	Partially logged.
Deep Cr.	130	180	X		1.3:1	1.0:1	21.0	26.2	41.7	
Edna Cr.	132	740		X	.7:1	.9:1	3.7	2.9	6.5	
Swamp Cr.	133	730		X	.2:1	.2:1	1.6	.3	1.9	
Fortine Basin	136	1,800	X		.9:1	1.1:1	3.7	3.4	7.0	
Libby-Troy										
Upper Wolf	139	440		X	1.7:1	3.1:1	2.3	4.2	6.4	
Cedar Cr.	183	260		X	.0:1	0:1	.7	0	.7	
Libby Cr.	191	1,400		X	1.7:1	1.9:1	2.0	3.0	4.9	
Midas Cr.	192	45		X	.6:1	.5:1	14.9	10.5	23.8	
Lookout Cr.	93	600	X		1.7:1	1.7:1	45.0*	77.0	87.3	* Estimate.
		48,650			2.5:1	2.4:1	6.6	16.7	22.2	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE VI

LOLO NATIONAL FOREST

Block & Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Superior										
Cedar Cr. Oregon Gl.	4	150	X		1.2:1	.8:1	6.0	7.2	12.8	
Cedar Cr. Upper Cedar		531	X		1.7:1	1.4:1	6.0	7.0	12.6	
Upper Trout Cr.	6	372	X		5.7:1	3.5:1	20.0	100.	100.0	
Seeley Lake										
Placid Cr.	25	490	X		.6:1	.5:1	18.0	11.2	27.2	
Uhler Cr.	32	275		X	1.0:1	.6:1	.7	.7	1.4	Endemic
Camp - Inez	38	785		X						No inf. recorded.
Benedict - Findell	39	700		X						No inf. recorded.
Morrell	41	950		X	.3:1	.2:1	5.4	1.8	7.1	
Powell										
Granite Cr.	67	277	X		5.5:1	5.1:1		No Data		Aerial sur. spring.
West Fk. Lolo Cr.	68	247	X		2.4:1	1.4:1	5.4	12.5	17.2	
West Fk. Butte Cr.	72	1,280	X		3.3:1	2.9:1		No Data		
South Fk. of Lost Cr.	73	1,934	X		2.2:1	1.8:1	45.0	100.	100.0	4" & 6" attacked.
Upper East Fk. Lolo Cr.	77	1,211	X		2.3:1	1.8:1		No Data		Being logged.
Lost Park Cr.		1,600	X		1.0:1	.7:1		No Data		Low in 1952.
Brushy Fk. Packers Mdws.	78	1,465	X		2.9:1	2.7:1	6.0	17.3	22.3	'52 data limited.
Crooked Fk.	81	765	X		2.3:1	1.9:1	16.0	36.3	46.5	Rocky Pt. Ridge.
Lower Crooked Fk.	82	1,670	X		2.4:1	1.4:1	6.0	14.7	19.8	Beaver Ridge.
Papoose Cr.	83	2,968	X		4.0:1	3.7:1	3.9	15.8	19.1	
Squaw Cr.	85	3,942	X		1.0:1	1.2:1	4.9	5.0	9.6	
Cayuse Cr.	21	5,200	X		2.5:1	2.0:1	5.2	12.8	17.3	
Selway-Bitterroot										
Wild Area		2,000		X	2.0:1	1.8:1	5.6	12.0	17.0	Est. 23,000 acres.
		28,812			2.0:1	1.8:1	7.4	14.8	21.1	

POST-FLIGHT SURVEY DATA OF ENGELMANN SPRUCE BEETLE INFESTATION

1953

TABLE VII

ST. JOE NATIONAL FOREST

Block and Compartment	No.	Acres Surveyed	Type of Survey: Ratio	Type of Survey: Reconn.	Ratio of Change 1953 to 1952: Stems	Ratio of Change 1953 to 1952: B. A.	% of Residual Stand Infested (Stems): 1952	% of Residual Stand Infested (Stems): 1953	% of Residual Stand Infested (Stems): '52-'53	Remarks
Fishhook - Little N. Fk.										
Outlaw-Red Raven	3	1,260	X		2.6:1	2.0:1	10.5	27.9	35.5	-Most of '52 attacks
East Fk. Fishhook Cr.	5	4,198		X	1.6:1	1.5:1	12.0	4.9	16.3	-logged.
Upper Sisters	6	4,660		X	1.9:1	2.4:1	3.0	5.8	8.6	'52 attacks logged.
Hilo-Bearskull	7	4,424		X	1.1:1	.8:1	13.0	14.6	25.7	
Alpine	8	3,166	X		6.7:1	5.9:1	11.3	76.0	78.7	
Little N. Fk.	200	6,700	X		1.6:1	1.0:1	17.0	28.4	40.6	- Original '52
Adair Cr.	201	4,000		X	1.3:1	.8:1	3.7	5.0	8.5	infestation 19%
Rocky Run	202	1,945	X		2.0:1	1.3:1	11.8	23.0	32.1	- mostly logged.
Rutledge	203	2,300		X	1.9:1	1.4:1	9.0	18.0	25.4	
Spotted Louie	207	1,167		X	.8:1	.6:1*	18.0	17.1	32.0	* Estimate
Upper St. Joe										
West Fk. Bluff Cr.	24	1,280	X		3.0:1	2.0:1	30.0	92.0	94.4	
Niagra Cr.	26	1,362		X	3.4:1	3.0:1	4.1	14.4	17.9	
Three Lakes Cr.	27	1,379		X	3.7:1	2.3:1	2.2	8.6	10.6	
Simmons Cr.	28	2,205		X	1.9:1	1.2:1	2.4	4.6	6.9	
Bruin Cr.	31	366	X		3.6:1	2.5:1	2.6	9.4	11.7	
Tumbledown	32	334	X		1.8:1	1.5:1	23.7	44.4	57.6	
Quartz Cr.	33	427	X		2.5:1	1.4:1	16.5	42.1	51.6	
Entente	34	1,290	X		2.7:1	2.6:1	6.8	39.2	43.3	
Nugget Periwinkle	41	1,592		X						No inf. recorded.
Lower St. Joe										
Daveggio	80	2,328	X		1.2:1	1.0:1	43.0	52.3	72.8	Being logged.
Homestead Cr.	82	3,123		X	1.9:1	1.4:1	22.3	54.9	64.9	
Bussel Cr.	84	1,847	X		1.0:1	.8:1	2.5	2.3	4.7	
Duplex Delaney	86	924		X	3.0:1	2.5:1	10.7	36.2	43.0	
		52,277			2.6:1	1.7:1	6.4	18.1	23.3	

TABLE VIII

REGIONAL SUMMARY

Forest	Acres Surveyed	Ratio of Change 1953 to 1952		% of Residual Stand Infested (Stems)		
		Stems	B. A.	1952	1953	'52-'53
Cabinet	17,251	2.2:1	1.8:1	6.7	15.7	21.3
Clearwater	28,067	2.3:1	2.2:1	3.0	7.7	10.5
Flathead	97,769	1.9:1	1.6:1	2.5	4.8	7.2
Kaniksu	39,577	1.8:1	1.7:1	4.9	9.1	13.6
Kootenai	48,650	2.5:1	2.4:1	6.6	16.7	22.2
Lolo	28,812	2.0:1	1.8:1	7.4	14.8	21.1
St. Joe	52,277	2.6:1	1.7:1	6.4	18.1	23.3
	312,403	2.1:1	1.9:1	4.5	10.0	14.0

In the foregoing tables only areas covered by ground surveys are shown. These areas represent only about half of the spruce type in the seven forests listed. There are, for example, over half a hundred compartments totaling some 158,000 acres where Forest Service post-flight operational surveys were scheduled. Reconnaissance surveys in such areas would only be a gross duplication of effort. In other areas, aerial reconnaissance supplanted ground work and provided sufficient information to recommend operational surveys. Wilderness areas of large acreage were, in many instances, surveyed by air only. Many inoperable areas were not surveyed at all.

Generally, the predicted 2:1 increase in the number of trees infested in 1953 held up well throughout the infested portion of the region. There is still a great store of spruce timber and ample host material for a continued loss. However, in many of the more heavily hit compartments the stand is gone, and there will be no increase in 1954.